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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,863	06/05/2006	Sumihide Yanase	1417-526	1936
23117 7590 03/13/2008 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203				
EXAMINER				
BUJE, NICOLE M				
ART UNIT		PAPER NUMBER		
4145				
MAIL DATE		DELIVERY MODE		
03/13/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/563,863

Applicant(s)

YANASE ET AL.

Examiner

NICOLE M. BUJE

Art Unit

4145

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/86)
Paper No(s)/Mail Date 20080220/ 20061009
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 01/09/2006 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered, since there were no copies provided of the foreign patent documents.

Claim Objections

2. Claim 5 is objected to under 37 CFR 1.75 (c), as being of improper dependent form because it does not include every limitation of the parent claim. A proper dependent claim shall not conceivably be infringed by anything which would not also infringe the basic claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim recites "further comprising 1 to 10% by weight of low molecular weight tetrafluoroethylene resin", but in the parent claim 1, all the components add up to 100% of the composition. Therefore, the composition of claim 1 cannot have an additional component.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claim 1 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al. (US 5,732,322).

Regarding claim 1, Nakamura et al. discloses a resin composition for sliding member (Abstract, C1/L5-8), comprising 1 to 25% of component A selected from the group consisting of phosphates and barium sulfate (Abstract, C2/L15-24), which overlaps with the claimed range of 6 to 45%. Nakamura et al. further discloses 1 to 15% magnesium silicate and the balance of a tetrafluoroethylene resin (Abstract, C2/L15-24). However, Nakamura et al. does not disclose both phosphate and barium sulfate in the same composition.

Regarding the phosphate and barium sulfate of said claim, since both substances have an

effect of facilitating formation of lubricating film of polytetrafluoroethylene on the sliding surface of the mating member is taught by Nakamura et al. (C4/L61-66), it is well settled to use a combination of them as in *In re Kerkhoven*, 205 USPQ 1069, 1072 (CCPA 1980). i.e., it is well settled that is a *prima facie* obvious to combine two ingredients each of which is taught by the prior art to be useful for the same purpose.

Regarding the concentrations of phosphate and barium sulfate of said claim, since the instant specification is silent to unexpected results, the specific concentrations of phosphate and barium sulfate is not considered to confer patentability to the claims. As the formation amount of lubricating film is variable that can be modified by adjusting said concentrations of phosphate and barium sulfate, the precise concentrations of phosphate and barium sulfate would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed concentrations of phosphate and barium sulfate cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the concentrations of phosphate and barium sulfate to obtain desired formation amount of lubricating film (*In re Boesch*, 617 F.2d. 272,205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*, 105 USPQ 223).

Regarding claim 6, Nakamura et al. discloses all the claim limitations as set forth above. Nakamura et al. further discloses a sliding member comprising a steel back plate and a porous sintered metal layer formed on the steel back plate (C6/L18-21), wherein pores and surface of the

porous sintered metal layer are respectively filled and coated with the resin composition for sliding member (C7/L10-42).

7. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al. (US 5,732,322) as applied to claim 1 above in view of Nakamura et al. (US 5,616,406).

Regarding claim 2, Nakamura et al. (US '322) discloses all the claim limitations as set forth above. Nakamura et al. (US '322) further discloses a resin composition comprising either 0.1 to 5% of molybdenum disulfide or 0.1 to 4% graphite (C5/L64-C6/L14), which are both solid lubricants as taught by Nakamura et al. (US '406) (C4/L25-28). Nakamura et al. (US '406) also teaches a resin composition for a sliding member (Abstract, C2/L20-31). The amount of said solid lubricants overlaps the claimed range of 0.1 to 2%. It would have been obvious to one of ordinary skill in the art at the time of invention to have selected the overlapping portion of the ranges disclosed by the reference because overlapping ranges have been held to be a *prima facie* case of obviousness. *In re Malagari*, 182 USPQ 549. The claimed amount would have been obvious to one of ordinary skill in the art through routine experimentation in an effort to optimize lubricating ability and wear resistance taking into consideration the characteristics of the resin composition, such as high chemical and heat resistance as well as friction and wear characteristics.

Regarding claims 3 and 4, Nakamura et al. (US'322) discloses all the claim limitations as set forth above. Nakamura et al. (US '322) does disclose fillers (C6/L49-59), but the reference does not disclose the specific inorganic fillers.

Nakamura et al. (US '406) teaches a sliding member and a resin composition comprised of polytetrafluoroethylene (Abstract, C2/L20-31). Nakamura et al. further discloses 5 to 30% of

wollastonite (C2/L23-31), which is reinforcing filler.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the inorganic filler, wollastonite, of Nakamura et al. (US '406) to the resin composition of Nakamura et al. (US '322), for the purpose of reinforcing the resin composition for the sliding member.

Regarding the amount of inorganic filler, since the instant specification is silent to unexpected results, the specific amount of inorganic filler is not considered to confer patentability to the claims. As the degree of reinforcement is variable that can be modified by adjusting said amount of inorganic filler, the precise amount of inorganic filler would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed amount of inorganic filler cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the amount of inorganic filler to obtain desired degree of reinforcement (*In re Boesch*, 617 F.2d. 272,205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*, 105 USPQ 223).

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al. (US 5,732,322) as applied to claim 1 above in view of Kato et al. (US 5,906,967).

Nakamura et al. discloses all the claim limitations as set forth above. While Nakamura et al. does not disclose the specific tetrafluoroethylene, the reference is not limited to any specific examples of tetrafluoroethylene.

Kato et al. teaches a non-sticking sliding part molding composition comprising a mixture of a fluororesin with other components (Abstract, C1/L9-12). Kato et al. further discloses low molecular weight PTFE (C4/L66-C5/L16). Additionally, Kato et al. discloses the molecular weight of said fluororesin is not so critical, but in the case of PTFE, its melt viscosity is preferably not greater than 107 poises at 380°C.

Therefore, it would have been obvious to one of ordinary skill in the art to incorporate low molecular weight PTFE of Kato et al. for the resin composition of Nakamura et al., for the purpose of not hindering melt flow.

Regarding the amount of low-molecular weight tetrafluoroethylene, since the instant specification is silent to unexpected results, the specific amount of low-molecular weight tetrafluoroethylene is not considered to confer patentability to the claims. As the viscous flow is variable that can be modified by adjusting said amount of low-molecular weight, the precise amount of low-molecular weight tetrafluoroethylene would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed amount of low-molecular weight tetrafluoroethylene cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the amount of low-molecular weight tetrafluoroethylene to obtain desired melt flow (*In re Boesch*, 617 F.2d. 272,205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*, 105 USPQ 223).

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NICOLE M. BUIE whose telephone number is (571)270-3879. The examiner can normally be reached on Monday-Thursday, 7:30am-5pm, (EST), and Fridays, 7:30am-4pm with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Basia Ridley can be reached on (571)272-1453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/N. M. B./
Examiner, Art Unit 4145
3/16/2008

/Basia Ridley/
Supervisory Patent Examiner, Art Unit 4145